

Remarks

In view of the above amendments and the following remarks, reconsideration and further examination are respectfully requested.

Claims 33, 34, and 40-46 have been canceled without prejudice. Claim 47 has been amended. Consequently, claims 1-32, 35-39, and 47-62 are currently pending and under consideration.

Claim Objections

On page 2 of the Office Action, claim 47 was objected to for an informality. The claim has been amended to correct a grammatical error. No new matter has been added.

Independent Claim 1

On page 2 of the Office Action, independent claim 1 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 6,206,882) in view of Tune (US Patent 4,905,680) and Tormala et al. (US Patent 4,655,203).” As discussed further below, it is respectfully submitted that the references do not show all elements of the pending claims and they cannot be combined as the Office Action suggests.

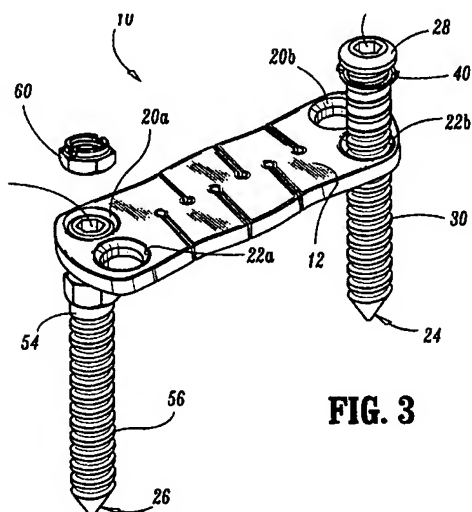
Applicant submits that none of Cohen, Tunc, or Tormala et al. teach or suggest all of the claim limitations. In particular, none of these references teach “a reinforcing component...to inhibit the translational or rotational movement for a first one of the two or more bone portions relative to a second one of the two or more bone portions” as recited in claim 1. The Office Action asserts that Cohen discloses “a reinforcement member (see Fig. 6) that, when used in combination with an appropriate plate embodiment and bone anchor would be capable of reinforcing the attachment of the device to two bone portions.” The Office Action does not recognize that Cohen cannot inhibit movement for a first one of the two or more bone portions relative to a second one of the two or more bone portions. The lock washer 40 in Cohen is not configured to inhibit movement of vertebrae relative to each other instead the lock washer 40 inhibits movement of a bone screw relative to a bone plate 10. The lock washer 40 in Cohen bites into the undersurface of the head of a bone screw and prevents the screw from moving within a counter-sunk bore or hole 20a, 22a of the bone plate 10. “Lock washer 40 includes an annular base portion 42 from which depends four circumferentially spaced apart engagement

tabs that are adapted and configured to bite into and engage the undersurface of the head 28 of bone screw 24 and the countersunk surface of a bore, as the lock washer 40 is compressed against the countersunk bore surface, *so as to advantageously prevent movement of the bone screw within the countersunk bore.*" (Col. 4, ll. 35-45) The lock washer 40 prevents movement of the attached bone screw relative to plate 10. Cohen requires plate 10 to flex to allow movement of vertebrae attached to plate 10. "[T]he plate body 12 of bone plate 10 is provided with a plurality of transverse flexure slots which enhance the elasticity or flexibility of the device..." (Col. 3, ll. 40-45) Therefore, the lock washer 40 cannot inhibit movement of the bone portions *relative to each other* because to do so would prevent Cohen plate 10 from flexing and allowing vertebrae to move.

Moreover, the references cannot be combined as the Office Action suggests. Tunc teaches an absorbable or biodegradable bone plate. (Col. 2, ll. 60-65) To form the Cohen lock washer 40 from the biodegradable material of Tunc would allow the lock washer 40 to degrade over time and form an unstable connection between the plate 10 and the bone screw 24. After the biodegradable lock washer 40 degrades, the once secure and stable connection between the bone screw 24, lock washer 40, and the plate 10 becomes unstable. The instability of the bone screw 24 with the plate 10 enables movement of the plate 10 with respect to the bone screw 24 and the corresponding vertebrae. Therefore, to make the lock washer 40 from biodegradable material would likely make the lock washer 40 impossible to use for its specified purpose in Cohen. Cohen specifies "bone screw 24 cooperates with a compressible lock washer 40 that is adapted and configured to *securely* engage bone screw 24 within a countersunk bore of plate body 12." (Col. 4, ll. 33-35) Lock washer 40 is compressed against the countersunk bore surface to prevent movement of the bone screw within the countersunk bore (Col. 4, ll. 40-45). Therefore to form the lock washer 40 out of the biodegradable material from Tunc would make the Cohen lock washer 40 impossible to use for its specified purpose. The Cohen and Tunc references, either alone or in combination, do not show, teach or suggest the elements of claim 1, and accordingly this rejection should be withdrawn. Dependent claims 2-32 and 35-39 are dependent from claim 1, and are allowable for at least these reasons.

Dependent Claim 16

On page 2 of the Office Action, dependent claim 16 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 6,206,882) in view of Tunc (US Patent 4,905,680) and Tormala et al. (US Patent 4,655,203).” Claim 16 is allowable over the Cohen, Tunc, and Tormala et al. references for a number of reasons. Among these, claim 16 is dependent from claim 1, which is allowable for at least the reasons discussed above. In addition to the reasons stated above, dependent claim 16 is allowable over Cohen, Tunc, and Tormala et al. since these references do not show reinforcing material encasing a portion of the bone plate. The Office Action asserts that bone plate 10 and lock washer 40 are similar to the elongate member and the reinforcing component, respectively, recited in claim 1. Cohen shows a lock washer 40 inside or perhaps atop bone plate 10. The lock washer 40 does not encase the bone plate 10 as shown below in Fig. 3 instead the lock washer 40 engages the bone screw. The lock washer 40 in Cohen bites into the undersurface of the head of a bone screw and prevents the screw from moving within a counter-sunk bore or hole 20a, 22a of the bone plate 10. The Cohen, Tunc, and Tormala et al. references, either alone or in combination, do not show, teach or suggest the elements of claim 16, and accordingly this rejection should be withdrawn.



Dependent Claim 19

On page 2 of the Office Action, dependent claim 19 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 6,206,882) in view of Tunc (US Patent 4,905,680) and Tormala et al. (US Patent 4,655,203).” Claim 19 is allowable over the Cohen,

Tunc, and Tormala et al. references for a number of reasons. Among these, claim 19 is dependent from claim 1, which is allowable for at least the reasons discussed above. In addition to the reasons stated above, dependent claim 19 is allowable over Cohen, Tunc, and Tormala et al. since these references do not show the first portion has a first cross sectional area and the second portion has a second cross sectional area greater than the first cross sectional area as recited in dependent claim 19. Cohen shows a plate 10 having a thickness “t” (Col. 3, ll. 24-27). Moreover, to vary the thickness of plate 10 would create stress concentrations in plate 10 as plate 10 flexes. The creation of stress concentrations in plate 10 is directly contrary to Cohen. Cohen teaches plate 10 includes a plurality of flexure slots that terminate in rounded surface areas 18a-18f (Col. 3, ll. 52-60). Cohen also teaches the flexure slots are configured to reduce stress concentrations and thus prevent stress fractures in the plate body when the plate undergoes flexure (Col. 3, ll. 60-63). Therefore, to vary the thickness of plate 10 would vary the stress concentrations throughout plate 10. As should be appreciated, the thinner portion of plate 10 would have higher stress concentrations than the thicker portion of plate 10 which is directly contrary to Cohen. The Cohen, Tunc, and Tormala et al. references, either alone or in combination, do not show, teach or suggest the elements of claim 19, and accordingly this rejection should be withdrawn.

Dependent Claim 29

On page 2 of the Office Action, dependent claim 29 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 6,206,882) in view of Tunc (US Patent 4,905,680) and Tormala et al. (US Patent 4,655,203).” Claim 29 is allowable over the Cohen, Tunc, and Tormala et al. references for a number of reasons. Among these, claim 29 is dependent from claim 1, which is allowable for at least the reasons discussed above. In addition to the reasons stated above, dependent claim 29 is allowable over Cohen, Tunc, and Tormala et al. since these references do not show reinforcing material encasing at least a portion of the orthopedic rod. The Office Action asserts that bone plate 10 and lock washer 40 are similar to the elongate member and the reinforcing component, respectively, recited in claim 1. As stated previously, Cohen shows a lock washer 40 inside or perhaps atop bone plate 10. The lock washer 40 does not encase the bone plate 10 instead the lock washer 40 encases and engages the bone screw. The lock washer 40 in Cohen bites into the undersurface of the head of a bone

screw and prevents the screw from moving within a counter-sunk bore or hole 20a, 22a of the bone plate 10. The Cohen, Tunc, and Tormala et al. references, either alone or in combination, do not show, teach or suggest the elements of claim 29, and accordingly this rejection should be withdrawn.

Dependent Claim 32

On page 2 of the Office Action, dependent claim 32 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 6,206,882) in view of Tunc (US Patent 4,905,680) and Tormala et al. (US Patent 4,655,203).” Claim 32 is allowable over the Cohen, Tunc, and Tormala et al. references for a number of reasons. Among these, claim 32 is dependent from claim 1, which is allowable for at least the reasons discussed above. In addition to the reasons stated above, dependent claim 32 is allowable over Cohen, Tunc, and Tormala et al. since these references do not show the first portion has a first cross sectional area and the second portion has a second cross sectional area greater than the first cross sectional area as recited in dependent claim 32. As stated above, Cohen shows a plate 10 having a thickness “t” (Col. 3, ll. 24-27). Moreover, to vary the thickness of plate 10 would create stress concentrations in plate 10 as plate 10 flexes. The creation of stress concentrations in plate 10 is directly contrary to Cohen. Cohen teaches plate 10 includes a plurality of flexure slots that terminate in rounded surface areas 18a-18f (Col. 3, ll. 52-60). Cohen also teaches the flexure slots are configured to reduce stress concentrations and thus prevent stress fractures in the plate body when the plate undergoes flexure (Col. 3, ll. 60-63). Therefore, to vary the thickness of plate 10 would vary the stress concentrations throughout plate 10. As should be appreciated, the thinner portion of plate 10 would have higher stress concentrations than the thicker portion of plate 10 which is directly contrary to Cohen. The Cohen, Tunc, and Tormala et al. references, either alone or in combination, do not show, teach or suggest the elements of claim 32, and accordingly this rejection should be withdrawn.

Independent Claim 47

On page 3 of the Office Action, independent claim 47 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 6,206,882) in view of Tunc (US Patent 4,905,680) and Tormala et al. (US Patent 4,655,203).” As discussed further below, it is

respectfully submitted that the references do not show all elements of the pending claims and they cannot be combined as the Office Action suggests.

Applicant submits that none of Cohen, Tunc, or Tormala et al. teach or suggest all of the claim limitations. In particular, none of these references teach “a reinforcing component...to inhibit the translational or rotational movement for a first one of the two or more bone portions relative to a second one of the two or more bone portions” as recited in claim 47. As stated previously for claim 1 which includes this same limitation, the lock washer 40 in Cohen is not configured to inhibit movement of vertebrae relative to each other. For at least the reasons stated above for independent claim 1 which includes this same limitation as independent claim 47, the Cohen, Tunc and Tormala et al. references, either alone or in combination, do not show, teach or suggest the elements of independent claim 47, and accordingly this rejection should be withdrawn. Dependent claims 48-62 are dependent from claim 47, and are allowable for at least these reasons.

Dependent Claim 60

On page 2 of the Office Action, dependent claim 60 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 6,206,882) in view of Tunc (US Patent 4,905,680) and Tormala et al. (US Patent 4,655,203).” Claim 60 is allowable over the Cohen, Tunc, and Tormala et al. references for a number of reasons. Among these, claim 60 is dependent from claim 47, which is allowable for at least the reasons discussed above. Additionally, dependent claim 60 is allowable for the reasons stated previously for dependent claim 29 which includes the limitation “reinforcing material encases at least a portion of the orthopedic rod.” The Cohen, Tunc, and Tormala et al. references, either alone or in combination, do not show, teach or suggest the elements of claim 60, and accordingly this rejection should be withdrawn.

Dependent Claim 61

On page 2 of the Office Action, dependent claim 61 was “rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 6,206,882) in view of Tunc (US Patent 4,905,680) and Tormala et al. (US Patent 4,655,203).” Claim 61 is allowable over the Cohen, Tunc, and Tormala et al. references for a number of reasons. Among these, claim 61 is

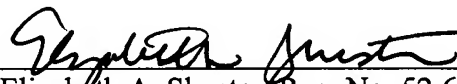
dependent from claim 47, which is allowable for at least the reasons discussed above.

Additionally, dependent claim 61 is allowable for the reasons stated previously for dependent claim 32 which includes the limitation "the first portion has a first cross sectional area and the second portion has a second cross sectional area greater than the first cross sectional area." The Cohen, Tunc, and Tormala et al. references, either alone or in combination, do not show, teach or suggest the elements of claim 61, and accordingly this rejection should be withdrawn.

It should be understood that the above remarks are not intended to provide an exhaustive basis for patentability or concede the basis for the rejections in the Office Action, but are simply provided to overcome the rejections made in the Office Action in the most expedient fashion.

In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early notice of allowance is earnestly solicited. If after reviewing this amendment the Examiner feels that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the undersigned representative by telephone to resolve such issues.

Respectfully submitted,

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